List of Contents

NUMBER 1

A. H. Fanney and **S. A. Klein** (*U.S.A.*) — 1 Thermal performance comparisons for solar hot water systems subjected to various collector and heat exchanger flow rates

D. Büttner, R. Caps, U. Heinemann, E. Hümmer, A. Kadur and **J. Fricke** (*F.R.G.*) — 13 Thermal loss coefficients of low-density silica aerogel tiles

F. Gutiérrez (*Mexico*) — 17 Behavior of a household absorption–diffusion refrigerator adapted to autonomous solar operation

Allan T. Kirkpatrick and **Dallas D. Hill** (*U.S.A.*) — 25 Mixed convection heat transfer in a passive solar building

N. K. Bansal, R. L. Sawhney, Anil Misra (*India*) and **A. Boettcher** (*F.R.G.*) — 35 Solar sterilization of water

Panayotis Theodore Tsilingiris (*U.K.*) — 41 An accurate upper estimate for the transmission of solar radiation in salt gradient ponds

Frank C. Kaminsky and **Robert H. Kirchhoff** (*U.S.A.*) — 49 Bivariate probability models for the description of average wind speed at two heights

A. W. Harrison and **C. A. Coombes** (*Canada*) — 57 Angular distribution of clear sky short wavelength radiance

U. Amato, V. Cuomo, F. Fontana, C. Serio and **P. Silvestrini** (*Italy*) — 65 Behavior of hourly solar irradiance in the Italian climate

Letter to the Editor

D. J. Close (*Australia*) — 81 Comments on "Analysis of a V-groove solar collector with a selective glass cover" by R. M. S. Gama, J. A. O. Pessanka, J. A. R. Parise and F. E. M. Samboya

NUMBER 2

Articles

V. A. Graham (*Trinidad*), **K. G. T. Hollands** and **T. E. Unny** (*Canada*) — 83 A time series model for K_t with application to global synthetic weather generation

S. Jain and **P. C. Jain** (*Italy*) — 93 A comparison of the Angstrom-type correlations and the estimation of monthly average daily global irradiation

S. M. Habali, M. A. S. Hamdan, B. A. Jubran and **A. I. O. Zaid** (*Jordan*) 99 Assessment and applications of wind energy in Jordan

J. T. O. Kirk (*Australia*) 107 Effect of scattering and absorption on solar pond efficiency

J. Nicolas and **J.-P. Poncelet** (*Belgium*) 117 Solar-assisted heat pump system and in-ground energy storage in a school building

N. E. Wijeysundera and **V. Thevendran** (*Singapore*) 127 A two-dimensional heat transfer analysis of the thermal-trap collector

D. R. Otis and **G. F. Jones** (*U.S.A.*) 135 Neutral planes in stratified, thermally driven multiple-room enclosures

G. W. Sadler and **E. Y. Leung** (*Canada*) 139 A summary of operation results for the air solar heating system for Module 6 of the Alberta Home Heating Research Facility

R. R. Marchini and **T. L. Howard** (*U.S.A.*) 147 Maxwell–Garnett theory analysis of thick PbS-Al selective absorbers

S. A. M. Burek, B. Norton and **S. D. Probert** (*U.K.*) 151 Analytical and experimental methods for shadow-band correction factors for solarimeters on inclined planes under isotropically diffuse and overcast skies

C. A. Coombes and **A. W. Harrison** (*Canada*) 161 Angular distribution of overcast sky short wavelength radiance

Q. Zhao, G. W. Sadler and **J. J. Leonard** (*Canada*) 167 Transient simulation of flat-plate solar collectors

175 Erratum

Communications

J. J. O'Gallagher and **R. Winston** (*U.S.A.*) 177 Evaluating the economic advantage of two-stage tandem solar concentrators

R. E. Collins and **R. Schmid** (*Australia*) 181 Temperature measurement in Dewar type evacuated tubular collectors

Books Received

185 *Photovoltaic Power Generation* by G. Willeke and G. Grassi (eds.)

185 *The Solar Power Plants at Almeria* by G. Wettermark

185 *Solar Energy Applications to Buildings and Solar Radiation Data* by T. C. Steemers (ed.)

185 *Solar Energy Utilization* by H. Yuncu, E. Paykoc and Y. Yener (eds.)

NUMBER 3

Articles

Dennis Nullet and **Paul C. Ekern** (*U.S.A.*) 187 Modeling clear day insolation at sea level in Hawaii

O. C. Iloje (*Nigeria*) 191 Parametric effects on the performance of a solar-powered solid absorption refrigerator

G. Camera-Roda and **M. Bertelà** (*Italy*) 197 A model of black-liquid solar collector

F. Sick, T. K. Bushulte, S. A. Klein, P. Northey and **J. A. Duffie** (*U.S.A.*) 211 Analysis of the seasonal performance of hybrid liquid desiccant cooling systems

M. A. Abdelrahman, S. A. M. Said and **A. N. Shuaib** (*Saudi Arabia*) 219 Comparison between atmospheric turbidity coefficients of desert and temperate climates

Joseph J. Michalsky (*U.S.A.*) 227 *The Astronomical Almanac*'s algorithm for approximate solar position (1950–2050)

F. Vignola and **D. K. McDaniels** (*U.S.A.*) 237 Direct beam radiation: Projection onto tilted surfaces

P. D. Lund (*Finland*) 249 Effect of storage thermal behavior in seasonal storage solar heating systems

Ibrahim A. Olwi and **Adel M. A. Khalifa** (*Saudi Arabia*) 259 Computer simulation of the solar pressure cooker

R. J. Aguiar, M. Collares-Pereira and **J. P. Conde** (*Portugal*) 269 Simple procedure for generating sequences of daily radiation values using a library of Markov transition matrices

Ali Beba (*U.S.A.*) 281 Analysis of a solar-heated biogas fermenter

289 Announcement

NUMBER 4

Articles

John A. Duffie (*U.S.A.*) 291 Editorial

H. P. Garg and **D. S. Hrishikesan** (*India*) 295 Enhancement of solar energy on flat-plate collector by plane booster mirrors

R. Festa, C. F. Ratto, and **D. DeGol** (*Italy*) 309 A procedure to obtain average daily values of meteorological parameters from monthly averages

T. A. Reddy and **R. A. Attalage** (*Thailand*) 315 Differences in computed annual irradiation on inclined surfaces using isotropic and anistropic sky-diffuse models

X. Berger (*France*) 321 A simple model for computing the spectral radiance of clear skies

C. Choudhury, S. L. Andersen, and **J. Rekstad** (*Norway*) 335 A solar air heater for low temperature applications

Ahmed Y. El-Assy and **John A. Clark** (*U.S.A.*) 345 Thermal analysis of a flat-plate collector in multiphase flows, including superheat

David Govaer (*U.S.A.*) 363 Indoor collector testing with an incandescent simulator

K. K. Gopinathan (*South Africa*) 369 Empirical correlations for diffuse solar irradiation

D. E. Prapas, B. Norton, E. Milonidis, and **S. D. Probert** (*U.K.*) 371 Response function for solar-energy collectors

D. Faiman and **A. Zemel** (*Israel*) 385 Low-profile solar water heaters: The mirror booster problem revisited

J. M. Gordon (*Israel*) 391 Ideal solar concentrators for photoelectrochemical cells

NUMBER 5

Articles

H. Grossi Gallegos and **R. Lopardo** (*Argentina*) 397 Spatial variability of the global solar radiation obtained by the solarimetric network in the Argentine Pampa Humeda

D. Pissimanis, G. Karras, V. Notaridou and **K. Gavra** (*Greece*) 405 The generation of a "typical meteorological year" for the city of Athens

H. Suehrcke and **P. G. McCormick** (*Australia*) 413 The frequency distribution of instantaneous insolation values

H. Suehrcke and **P. G. McCormick** (*Australia*) 423 The diffuse fraction of instantaneous solar radiation

S. C. Kaushik (*India*) **S. M. B. Gadhi** (*Yemen*) **R. S. Agarwal** (*India*) and **R. Kumari** (*India*) 431 Modeling and simulation studies on single/double-effect absorption cycle using water-multicomponent salt (MCS) mixture

S. C. Mullick, A. Malhotra and **S. K. Nanda** (*India*) 443 Optimal geometries of composite plane mirror cusped linear solar concentrator with flat absorber

J. M. Gordon (*Israel*) 457 On optimized solar-driven heat engines

R. W. Stuart and **K. G. T. Hollands** (*Canada*) 463 A probability density function for the beam transmittance

A. S. Mehta, N. Pathak, B. M. Shah and **S. D. Gomkale** (*India*) 469 Performance analysis of a bittern-based solar pond

477 *Errata*

Communication

V. Badescu (*Romania*) 479 Comment on the statistical indicators used to evaluate the accuracy of solar radiation computing models

NUMBER 6

481 Introduction
485 Subject Categories
495 Subject Index
555 Author Index

AUTHOR INDEX

Abdelrahman, M. A., 219
Agarwal, R. S., 431
Aguiar, R. J., 269
Amato, U., 65
Andersen, S. L., 335
Attalage, R. A., 315

Badescu, V., 479
Bansal, N. K., 35
Beba, A., 281
Berger, X., 321
Bertela, M., 197
Boettcher, A., 35
Burek, S. A. M., 151
Bushulte, T. K., 211
Buttner, D., 13

Camera-Roda, G., 197
Caps, R., 13
Choudhury, C., 335
Clark, J. A., 345
Close, D. J., 81
Collares-Pereira, M., 269
Collins, R. E., 181
Conde, J. P., 269
Coombes, C. A., 57, 161
Cuomo, V., 65

DeGol, D., 309
Duffie, J. A., 211, 291

Ekern, P. C., 187
El-Assy, A. Y., 345

Faiman, D., 385
Fanney, A. H., 1
Festa, R., 309
Fontana, F., 65
Fricke, J., 13

Gadhi, S. M. B., 431
Gallegos, H. G., 397
Garg, H. P., 295
Gavra, K., 405
Gomkale, S. D., 469
Gopinathan, K. K., 369
Gordon, J. M., 391, 457
Govaer, D., 363
Graham, V. A., 83
Gutierrez, F., 17

Habali, S. M., 99
Hamdan, M. A. S., 99
Harrison, A. W., 57, 161
Heinemann, U., 13
Hill, D. D., 25
Hollands, K. G. T., 83, 463
Howard, T. L., 147
Hrishikesan, D. S., 295
Hummer, E., 13

Iloje, O. C., 191

Jain, P. C., 93
Jain, S., 93
Jones, G. F., 135
Jubran, B. A., 99

Kadur, A., 13
Kaminsky, F. C., 49
Karras, G., 405
Kaushik, S. C., 431
Kirchhoff, R. H., 49
Kirk, J. T. O., 107
Kirkpatrick, A. T., 25
Klein, S. A., 1, 211
Kumari, R., 431